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colleges in 1874, there were, including preparatory and collegiate departments, only about fourteen hundred students, by far the greater number of these in the lower grades of preparatory. It is found difficult to induce students to take extended classical or scientific drill. In closing this paper, I am glad to quote the opinion on this subject of a teacher known to you all, Dr. Marvin: "I had almost reached the conclusion that in Kansas we had struck the golden mean. The students with whom I had to do in Allegheny College were better drilled in the elements of education than most who come to us here. Our students certainly show a mental vigor, as a body, equal to any with whom I have met, in an experience of twenty-nine years of seminary and college labor. The students, as I know them in Keeseville Academy, Clinton county, New York, were quite as lively at ball, especially foot-ball, but not better in algebra. This is as I seem to see them in 1839. I doubt whether we yet have age and solidity enough in society here, to determine scientifically the merits and demerits of our climate or brain ability."

Baldwin City, Kansas, November, 1876.

BISON LATIFRONS IN KANSAS.

By B. F. Mudge.

In his monograph on the American bison, Prof. J. A. Allen has given a description of two species of extinct buffalo, viz.: *B. latifrons* and *B. antiquus*. Of these, the former is the largest, the rarest, and the most remarkable. No entire or half skeleton exists, and it has been found in four only of the United States. Even single bones are rare. It therefore becomes of interest to preserve every fragment of this gigantic animal. A few months ago, a horn-core of *B. latifrons* was fished from the bed of the Big Blue river, a few miles from Manhattan, Kas. We give its measurements as follows, viz.:

Length on the convex side	31 inches.
Length on the chord of the arc	22 inches.
Circumference 3 inches from the base	16½ inches.
Circumference 10 inches from the base	13 inches.
Circumference 14 inches from the base	12 inches.
Circumference 24 inches from the base	8½ inches.

Comparing these measurements with those given by Prof. Allen, we find our Kansas specimen a little shorter, more slender, and more curved than his. This would indicate the Kansas horn-core to be from a female. About an inch had been broken from the tip. If we restore this, and add the horn—which was rather slender—and the breadth of skull, we shall find that the distance from tip to tip will be over nine feet. The weight of *B. latifrons* was about four times that of the living buffalo. One other specimen has been found in Texas. As yet, these two are the only specimens of *B. latifrons* that have been discovered between the Mississippi river and the Rocky mountains.

HABITS OF THE PRAIRIE DOGS.

By H. A. Brous.

Prairie dogs have been the subject of many wild speculations. Much has been given to the public as facts concerning these interesting animals

that is purely imaginative. Each of the several species have habits nearly identical, modified by the country in which they live. These animals are widely distributed over the western Territories, extending from Texas to Minnesota. For the last four years we have studied their habits, and the following are most noticeable. They are quite prolific, bringing forth from four to six each season. The young are first observed early in May, and continue to appear throughout the month. They grow very rapidly, the pairing season being early in the fall. Until the following spring the young remain with the old dogs. Their holes are peculiarly constructed. For a few feet only the inclination is very great. That these holes communicate with others is obvious. When water is poured into one hole, the dog is often driven out of the entrance of its neighbor's house, some distance off. The amount of water that has been emptied into a single hole would go to disprove the non-communication, save above ground, with its neighbor. That the holes always communicate by subterranean passages, is not to be insisted on. Where the village is scattered, the greater would be the isolation. Naturally in a crowded town the dogs would have free and convenient passages below as above ground. Whenever their holes are in any way disturbed, the dogs repair the damages as speedily as possible. Early after a rain, as before, the villagers closely inspect their homes, to see that all is in proper shape, carefully arranging anything that is amiss. Banks surrounding the holes are kept higher than the surface of the ground, in order that the water may be prevented from filling the holes. In case of a leak, they will sometimes go out during a storm and repair the break. Tall weeds, grass, or anything growing on the "town site," that is apt in any way to obstruct their view, are cut down many times in the season, and left scattered quite thickly over the lots.

What is strangest of all is to see an owl wisely standing at a dog-hole, ducking its body as you attempt to approach. No less surprising is it to hear the startling warning from a large rattlesnake, and see it crawl safely into a hole beyond your reach. Dogs suffer more from the snakes than from the owls. The latter seek old abandoned holes, where they may take shelter and rear their brood. The darkest and deepest are not sought by the owl. They are contented to find a retreat near the surface of the ground. That owls prey on the young dogs is not to be doubted. While very young the dogs do not venture far from their mother, remaining in the holes during the night, while the owls are most active. In body these birds are smaller than quails. The old dogs are seldom attacked by the owls, and seemingly pay little attention to them after their young are old enough to shift for themselves. In the rattlesnake they find an enemy not so readily treated. No hole is secure; day and night the dogs are harassed of this, their worst and deadliest foe. Deep holes are retreats admirably adapted to the wants of the rattlesnake during the long winter months, where he finds a dry bed already prepared, and palatable meals furnished by the young, tender dogs. Thus the old dogs are subjected to great inconvenience, and, in an encounter, though they may drive the intruder from their holes, are sure to be left in a dying condition. More than once, after seeing a snake enter a prairie dog's hole, have I heard a struggle away down near the bottom. Often the dog is driven out, and dies of its poisonous wounds, or, after the snake has left, it succumbs, to be at last carried from its home by the remaining members. (The dogs carry off all effete matter.)

Sometimes, should the snakes venture into a hole where the occupants have been able to make good their escape, they may be conquered. The dogs seem to hold a sort of council for a few minutes, and then commence

filling up the hole he entered. In this way they very soon completely bury the snake alive, without subjecting themselves to any danger. During this operation the snake keeps up a constant threatening.

No animal has been able to do without water for any protracted period. Now, are we to suppose that prairie dogs are exceptions? While in a cage they partake of water freely, and when it is withheld for any length of time, they become languid and die. May we not conclude that in their prairie towns they have an underground passage to water? The country on which the villages are usually located does not in any way go to disprove it. Geographically, the idea and evidence strongly aid. Rain is too uncertain, and in most cases is brief and long deferred; so that to suppose an animal could endure the protracted drouth, where dews are very light or wanting, is decidedly improbable, to say the least. If not by such wells, when surface water is miles from the villages, in what other way can water be obtained?

HABITS OF AMBLYCHILA CYLINDRIFORMIS.

By H. A. Brous.

DESCRIPTION.

A. cylindriformis Say. Color, pitch black; elytra often brownish. Labrum with two obtuse teeth at middle. Head as large as the thorax; smooth. Eyes small. Thorax subcordate, margin not prominent, surface smooth, impunctured, subapical transverse impression faint. Elytra oblong, nearly twice as long as wide, humeri broadly rounded, sides feebly arcuate, apex suddenly declivous, surface coarsely but not densely punctured, and with two indistinct rows of large punctures and three fine carinæ on each side, the outer and inner extending to three-fourths, the intermediate slightly longer. Body beneath nearly smooth. Length, 1.20-1.25 inches.

Male—Hind trochanter acute and grooved. Female—Hind trochanter shorter, obtuse and smooth.

This beetle, usually considered very rare, is, I am satisfied, much more common than heretofore supposed. I base this opinion on my own observations, and have a good collection to sustain it. Their peculiar habits are evidently the great cause of their rarity, and once understood, I am positive they will become quite common. Their geographical distribution is, so far as is now known, rather limited; yet there is now no reason to suppose that they will not, eventually, be found extending over a large portion of Kansas, Colorado, northern Arkansas, and Arizona.

The following is what I have learned concerning them: Nocturnal (crepuscular), rarely being taken until after sunset, and occasionally in the morning. Found usually along clay banks, living in holes generally made by themselves, where they find that seclusion so congenial to their nature. The state of the weather affects appreciably this insect. When cold and blustery, they remain concealed, preferring a warm, balmy air; occasionally, a warm, cloudy afternoon will entice them from their retreats, but this is rarely to be expected. Like the rest of Cicindelidæ, they are predaceous. They also feed on effete matter. In many of their habits they are like *Asida*.